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## MODERN METHODS IN THE DIAGNOSIS OF SYPHILIS.

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Until the discovery of the spirocheta pallida by Schaudinn and Hoffman in 1905, the diagnosis of syphilis was based almost entirely on the clinical manifestations, and the treatment confined almost entirely to the use of mercury and the iodides.

Before this, there was one test that was used very infrequently that of Justus; depending on the increase of hemoglobin after the administration of mercury.

Since the discovery of the spirocheta, the advance in both diagnosis and treatment has been very rapid, in fact, the whole subject of syphilis has been almost entirely revolutionized. In 1905, Schaudinn and Hoffman found in the lesions of syphilis, especially the chancre and mucous patches, a spiral shaped organism, which, on account of its feeble staining power and the consequent pale appearance, they named the spirocheta pallida, afterward changing it to treponema pallidum. They found it in practically all syphilitic lesions and in none other than syphilitic conditions. Before the discovery of the spirocheta, other animals, notably apes and rabbits, had been inoculated with syphilis, using the virus from man. From these lesions in animals, the spirocheta was also obtained. Numerous attempts to cultivate it were made but no one succeeded in obtaining it in pure culture until 1911, when Noguchi announced that he had succeeded.

So now, it is absolutely proven that the spirochete is the cause of syphilis, as from these pure cultures the disease can be reproduced in animals.

Soon after the discovery of the spirocheta pallida, many methods of its demonstrations were brought forth. Those methods used chiefly today, are the dark field condenser or illuminator, the India ink method of Burri, the Giemsa stain and the silver impregnation methods.

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Of all these methods the dark field condenser is the most serviceable and accurate, as in this method opportunity is had of observing their characteristic movements. In this method the spirochetes show as colorless spirals on a dark back-ground. They have a cork-screw motion and roll from side to side. Their length is from one and one-half to three times the diameter of a red blood cell. They are spiral in shape with the curls of the spiral, numbering six to twenty-six, very close together.

The India ink method of Burri seeks to replace the dark field condenser but is not so successful, because of the inability to watch the movements of the organism. In this method a drop of the serum squeezed from the previously curetted lesion, is mixed on a slide with a drop of Chin-Chin India ink and spread on the slide as in making a blood smear. This is then examined with an oil immersion objective. By this method the organisms appear as colorless spirals on a dark back-ground.

With the Griemsa method of staining, which is quite commonly used, the slides are stained as in staining for malarial organisms, except that the stain is allowed to act longer, and generally, one or two drops of a one-tenth per cent potassium carbonate solution are added to the distilled water used to make the staining mixture. The spirochetes show as purple organisms.

By the silver impregnation method of Stern the spirochete appears brown or black.

In obtaining the serum for any of the methods of demonstration of the spirochete, the parts should be washed with sterile water without antiseptic, and after thorough cleansing should be gently scraped with a curette or dull knife until the serum can be expressed. The presence of many red blood corpuscles is undesirable, as they obstruct the view of the spirochetes. If antiseptics, especially mercury, have been used on the lesion or if it has been cauterized, the search for spirochetes is rendered much more difficult and sometimes futile. Hence a positive result is of the most value. However, in untreated primary and secondary cases, they can almost always be demonstrated. Consequently the search for them is of the greatest diagnostic importance, especially in the early stages before the appearance of a positive Wassermann test.

For over a year after its discovery, the finding of the spirochete was the only method for the diagnosis of syphilis, from the laboratory standpoint. In 1906 Wassermann brought forth the test bearing his name, which is recognized the world over as the most reliable means for the recognition of syphilis, especially after the first few weeks.

Probably more literature has appeared on the subject of the Wassermann test than almost any other medical subject of modern times, with the possible exception of salvarsan.

It has been lauded and criticised and modified until its exact status is somewhat uncertain in the minds of a good many of the medical profession.

However, it has emerged from all the criticism with a greater name than ever, and is today recognized as one of the most accurate diagnostic methods, although not absolutely specific, and probably not due to the substances its author thought it was.

This reaction, according to the original idea of Wassermann is based on the observation of Bordet and Gengou that an antigen, (that is, a substance capable of producing antibodies when injected into animals), in the presence of the antibody produced by this antigen, takes up complement, so that when another set of antigen and antibody are added to the mixture, the complement is used up and the characteristic reaction does not occur. in the second set of antigen and antibody added to the mixture. This is on account of the fact that the complement has been bound by the first set of antigen and antibody, and is not free to act in the second set. The whole matter is based on the well-known side-chain theory of Ehrlich.

It is a well-known fact that blood serum exerts a certain destructive action on bacteria. This action is called bacteriolysis, and by suitable experiments can be shown to be due to two separate elements, the amboceptor or sensitizing substance and the complement or completing substance. In other words the amboceptor prepares the bacteria so that they may be destroyed by the complement. Either element is entirely inactive by itself, but each is necessary to the action of the other. The same action has been noted in connection with blood serum with which has been mixed the corpuscles of another animal. This destruction of red corpuscles is known as hemolysis and requires the action of both amboceptor and complement. The bacteriolytic bodies present in normal blood are called normal bactriolysins, and the hemolytic bodies as normal hemolysins. By the injection of either bacteria or red blood corpuscles or various proteins into animals, antibodies specific for the substances injected are produced. These are called immune antibodies. On this phenomenon of immune antibody formation and the fixation or absorption of complement by the combination of antigen and antibody, was based the Wassermann test for syphilis.

But the conception of the reaction has changed, so that now

we consider that the binding substance in the blood of syphilitics is a lipotropic substance, (that is, a substance capable of uniting with a lipoid), rather than a specific antibody. The re-agents required are: The blood serum of the patient to be tested, the serum of a known syphilitic, the blood serum of a known normal individual, the blood serum of guinea-pigs, and the serum of a rabbit that has been injected with increasing doses of sheep corpuscles; also a suspension of sheep corpuscles and an extract of a fetal syphilitic liver or some other tissue of normal or syphilitic human beings or animals, depending on whose method is used. Nine-tenths of one per cent saline solution is used to dilute the re-agents.

The rabbit serum, the tissue extract and the guinea-pig serum must be standardized before being used, and the greatest care must be taken in the preparation of all the re-agents. On account of the large amount of work and on account of the apparatus required, the test will probably never be done very entensively by the general practitioner, but will be confined almost exclusively to the clinical laboratory. On account of the amount of time required, I will not attempt to describe the technique of the original Wassermann or any of its modifications.

As to the time of the first appearance of a positive Wassermann, authorities differ. Milne states that forty per cent of the cases have a positive when the initial sore appears. Quoting Lesser he states that one case was positive on the eighth day after exposure, fourteen days before the appearance of the primary lesion. Keidel reports one case positive as early as the fourth day after the appearance of the chancre. Craig reports one case as early as the fifth day after the appearance of the initial lesion. In my own work, the earliest positive I have ever seen was on the eighth day after the chancre appeared. In the majority of cases a positive will have appeared inside of three or four weeks after the beginning of the chancre. Some cases do not develop a positive until several weeks after the appearance of the secondary eruption.

As to the percentage of cases in whom there is manifest syphilis, giving a positive Wassermann, writers differ. The difference is due largely to the fact that the element of treatment has not been taken into consideration. Some of the discrepancy is due to the difference in technique and in the reagents employed. In primary syphilis the reports vary from fifty to ninety-eight per cent positives. Soon after the appearance of the chancre there will be very few positives while in the later days of the primary stage almost all will give a positive.

In secondary syphilis the results vary from seventy-nine to

one hundred per cent positives. However, in untreated secondary cases, a positive Wassermann will be obtained almost invariably. The lower figures are obtained on account of the inclusion in the statistics of treated cases.

In tertiary cases, the figures vary from fifty-seven to one hundred per cent positive. The variation here is caused by the inclusion of both treated and untreated cases in the statistics. Whether or not the case is healed or active also make considerable difference. The active tertiary cases give a very high percentage of positives. However, because a suspected case of tertiary syphilis gives a negative reaction, it can not be stated definitely that the case is not syphilis.

In latent syphilis the statistics also vary considerably. In early latent cases, or those late secondary cases without symptoms, from 20 to 80 per cent react positively. In late latent cases or those following the manifest tertiary stage, Noguchi reports practically the same figures from the literature. Hereditary syphilis gives positive results in practically all cases. Ulrich states that 95 per cent are active. In tabes the figures average about 60 to 70 per cent positives, varying from 40 to 80 per cent. In paresis, the figures run from 70 to 100 per cent, although most observers agree that a positive is obtained with few exceptions in both the blood and cerebro spinal fluid.

As regards the occurrence of the Wassermann reaction in non-syphilitic conditions, and in supposedly normal individuals, the reports of different writers vary.

Wassermann in 1910, is said to have made the statement that 10,000 tests had been performed in his laboratory without a single mistake. Schmidt, in a series of 1350 cases with 182 non-syphilitics, reports seven of these positive, six of which were lepers and one carcinoma. Boas reports over one thousand cases with one positive in a non-syphilitic. This was a case of scarlatina. It can thus be seen that reports of positive Wassermanns in non-syphilitics vary from none to four per cent. Barring leprosy, frambesia, and trypanosomiasis, none of which except frambesia is likely to be confused with syphilis, and none of which occur in this climate, a positive Wassermann is almost certain evidence of syphilis. It has been reported in a great variety of conditions, including malaria, carcinoma, diabetes and tuberculosis, but these cases are so few that it does not destroy the value of the test. The laws of Profeta and Colles have been almost upset by this reaction. Colles law states that an apparently healthy mother of a syphilitic child can not subsequently be infected by her child, thus imply-

ing that the mother is immune from syphilis. However, there have been a number of observations on this point and a large percentage of these women have been proven to be syphilitic. Conversely, the law of Profeta states that an apparently healthy child of a syphilitic mother cannot be later infected by its mother, again implying an immunity on the part of the child. In this case, also, there have been a number of tests made and a large number of these children have been shown to be syphilitic.

It can thus be seen that the Wassermann test is of the greatest importance in the diagnosis of syphilitic conditions. In the diagnosis of obscure cases, its value can hardly be overestimated. The etiology of many cases of habitual abortion can be determined by its use. Obscure nervous conditions are many times cleared up by the test, while bone lesions of unknown causation are frequently put in the list of those of known etiology. The distinction between brain tumors and gumma of the same organ can usually be made with the aid of the Wassermann test, although several writers have reported a positive test in connection with cases of brain tumor.

The value of the Wassermann in directing treatment has been recognized by our best clinicians, and is very widely used for that purpose, but it is not within the scope of my paper to discuss this phase of the reaction.

While the Wassermann test and the finding of the spirochetes are the principal methods for the laboratory diagnosis of syphilis, there are a number of other tests that are used to a certain extent.

These include Noguchi's luetin test, Noguchi's butyric acid test, Nonne's ammonium sulphate test, the test made with a pure culture of the spirocheta as antigen, the miostagmin reaction of Izar, the epiphanin reaction of Weichardt, and the cerebro-spinal cell count used in the diagnosis of tabes, paresis and cerebro-spinal syphilis. The luetin test is a cutaneous reaction analagous to the Von Pirquet reaction with tuberculin. For this test a killed pure culture of the spirocheta pallida is injected beneath the skin and in the course of 24 to 48 hours, usually there appears in the cases that are a positive characteristic reaction at the site of injection. This reaction is found in very few primary and untreated secondary cases, but Noguchi claims that it is of more use in the recognition of tertiary, hereditary and latent cases than is the Wassermann test. In tabes, and paresis according to his figures, the reaction was present in 60 per cent of the cases. The reaction is probably an anaphylactic phenomenon, and on this account does not appear till late in the disease, or until treatment has been administered.

Nonne's ammonium sulphate test and Noguchi's butyric acid test are both used considerably by some neurologists and psychiatrists. They both depend upon the increase in globulin in the cerebro-spinal fluid that occurs in syphilitic conditions, as well as in acute inflammatory conditions of the meninges.

Noguchi states that the butyric acid test will in many cases determine the existence of syphilis before the appearance of a positive Wassermann. Noguchi also applies his method to the blood. Notwithstanding the claims made for these tests, they have not yet come into general use, although some neurologists are very enthusiastic in their praise.

Noguchi has done considerable work with a fixation test, using a pure culture of the spirocheta as antigen. This is based on the same principle of complement fixation as the Wassermann test, except that the complement fixation in the spirocheta pallida reaction is caused supposedly by the antibodies specific for the spirocheta, while in the Wassermann fixation is caused by lipotropic substance formed in the blood of the syphilitic by the action of the spirochete.

Craig and Nichols have done a series of tests with cultures of the spirocheta pallida, spirocheta pertenuis and spirocheta microdent used as antigen, paralleling them with the Wassermann, and conclude that the test with the spirochete used as antigen is not of as great value as the Wassermann. However, so little work has been done on this phase of the fixation reaction, that it is too early to make any very definite statements as to its value.

The epiphanin reaction of Weichardt has not come into very extensive use on account of the very great complexity of the test. It is based upon the fact that when an antigen and its specific antibody are put in contact, the diffusion of the fluid is accelerated.

The miostagmin reaction of Izar has also failed to make much headway. Very little is written in the literature about this test, and so far as I can ascertain, there has not been any very extensive work done with it. It is based on the observation that when an antigen and its specific antibody are put in contact, there results a lowering in the surface tension of the fluid as is shown by the smaller size of the drops, measured by an instrument for the purpose.

Cyto-diagnosis or the count of the cells in the cerebro-spinal fluid is used very extensively by neurologists and psychiatrists in the diagnosis of tabes, paresis and cerebro-spinal syphilis. In these conditions the number of cells in the fluid is almost always increased, and in conjunction with the Wassermann test and the glob-

ulin precipitation tests of Noguchi and Nonne, and the clinical symptoms, the diagnosis can usually be made. Ball of Minneapolis, advocates the use of all four of these tests in all cases of obscure nervous disease.

## CONCLUSIONS.

1. In early primary cases the examination for the spirocheta is of the greatest importance; next the Wassermann test. Both of these should be done whenever possible, as one tends to confirm the other.

2. In secondary cases the Wassermann is of more importance than the search for the spirochetes, although these may usually be found in the lesions of secondary cases.

3. In tertiary and latent cases the search for spirochetes is of much less value; while the Wassermann is of very great use. luetin test promises to be of some importance in this stage while of very little value in the primary and secondary case.

4. In latent lues the search for spirochetes is of little use, while the Wassermann is found positive in over half of the cases. The luetin test also promises to be of value here.

5. In parasyphilitic conditions, the search for the spirochetes is futile, while the Wassermann test is of the greatest value, especially in the diagnosis of paresis in which it is found in nearly all cases. In these conditions, paresis and tabes; the cerebro-spinal cell count is also of great value while the precipitation tests of Nonne and Noguchi are said to be of considerable worth.

6. In hereditary syphilis the search for spirochetes is very seldom used, while the Wassermann reaction is of the utmost value. The luetin test also, according to many observers, is of a good deal of importance here.

7. The complement fixation test with a pure culture of the spirochete as antigen has not met with great favor so far, although theoretically correct. It does not seem to be of as much value as the Wassermann test. More work will have to be done with this reaction before its exact status can be decided.

8. The epiphanin and miostagmin reactions are not used enough to allow of any very definite conclusions as to their value.

9. Up to the present time the Wassermann test and the examination for the spirochetes with the promised addition of the luetin test, constitute the principal laboratory methods for the diagnosis of luetic conditions.

## OBSTRUCTION OF THE UPPER AIR PASSAGES.

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The regions included in this discussion are the nasal chambers, the epipharynx and the collateral cavities which open into them, namely, the frontal ethmoid and sphenoid sinuses, the maxillary cavities and the mastoid antra and cells. All of these collateral sinuses are liable to infectious and inflammatory processes due to pathological conditions within the main air passages. To treat this topic intelligently we must constantly keep in mind in our discussion the physiology and functions of the organs involved. For not only is the nose the organ of smell, but upon the proper use of the upper air passages depend the processes of respiration, vocalization and the receiving and transmitting of sound waves. It necessarily follows that a pathological condition anywhere in this region will interfere with normal functioning. It is well understood that mouth breathing is detrimental to both mental and physical development, so we may easily conclude that this in adult life results in imperfect physical and mental processes. It is well recognized that mental sluggishness in children is due not only to faulty breathing but to actual circulatory changes within the cranium, so it is quite possible that the change within the region at the base of the brain, especially in neglected cases, may be permanent and result in lowered brain functioning. It is a fact capable of ocular demonstration that neglected cases of mouth breathing are indelibly marked physically so it seems not unreasonable to assume that the damage done to the mental functions is also permanent. If this be so, it adds an additional reason for persistently teaching the necessity of early establishment of nasal respiration.

The most frequent cause of obstructed breathing in children is adenoids. Adenoids not only block the posterior nasal openings but retard the natural growth of certain of the facial bones and the capacity of the nostrils is both relatively and actually lessened. The palatine arch is narrowed laterally, thus decreasing the width of the nostrils and the central part is pushed upward elevating the floor of the nose. This causes the vomer and triangular cartilages and sometimes the perpendicular plate of the ethmoid to buckle, causing further obstruction in the already too constricted nasal chambers. Adenoids are the result of overgrowth of lymphoid tissue in the epipharynx. Undoubtedly part of the growth is

due to proliferation of lymphoid cells and part is probably due to circulatory changes. At any rate changes in the size of the mass take place rapidly so that one may breathe fairly well in an erect position and find the choanae blocked in a recumbent position. This increases the congestion in the surrounding tissues, the tonsils are apt to enlarge, pressure is made on the eustachian openings, the secretions become more abundant, the tissues lose vitality, pathological bacteria multiply and a more or less virulent inflammation in the pharyngal portion of the tubes is started, which either by contiguity of tissue or by the retention of septic secretion, is extended to the middle ear. Thus a foundation is laid for chronic disease of the middle ear or mastoiditis. Either trouble, if unchecked, will result in deafness. Middle ear disease is so closely connected with disease in the pharynx that bilateral purulent otitis media in a child is sufficient evidence to warrant a diagnosis of adenoids. Middle ear disease is largely a disease of civilization. The "untutored savage" who unloads his nostrils by placing a finger against one and blowing free through the other is less liable to tubal infection than his civilized relative who compresses both nostrils and inflates the eustachian tubes in his efforts to bury the discharges in a handkerchief.

While the vocal chords are the principal organs of speech, the nasal chambers and collateral cavities have much to do with tone production. The sound waves set in motion by the vocal chords are thrown upward against the vault of the pharynx, and reflected forward into the air chambers in front of it, and it is the unimpeded movement of the sound waves within these cavities that gives to the voice its proper quality and resonance. Therefore, anything that impedes sound vibration or reflexion, interferes with voice production. But in a more direct way, nasal obstruction impairs voice production. Adenoids in the vault or contact surfaces within the nasal chambers cause irritation, this augments secretion, and this in turn following the pharyngeal walls, cause the irritation to extend to the larynx. There results thickening about the laryngeal muscles, the easy movements of the cartilages are lessened and the flexibility of the voice impaired. Even trophic changes occur in the chords themselves and the power of sustained tones through unusual periods of speaking or singing is lost.

In the adult obstructions to normal breathing are usually within the nasal cavities. It is rare that adenoids large enough to obstruct breathing persist past maturity, although in many cases their persistence causes trouble in other ways.

In tone production we spoke of the necessity for free vibration of sound in the nasal chambers, so in respiration the passage of air through them must be unimpeded. It is not enough that the air pass through the nostrils, but it must pass through in a physiological manner. The inspiratory function of the nose is to temper the air and humidify it, as well as strain out particles of solid matter, that the air may reach the lung in the best possible condition. By far the most important structures in the nose for this function are the turbinate bodies. They are shaped to deflect the air current against the warm moist membranes without obstructing it. The middle and inferior turbinates incompletely divide the nasal chambers into three cavities. Near the roof of the superior meatus are the openings of the posterior ethmoid cells and posterior to this is the sphenoid opening, while at the anterior part of the middle meatus is the opening of the anterior ethmoid group and the frontal sinus, while posteriorly lies the opening into the maxillary antrum. These cells are lined by secreting membranes and furnish moisture that should be taken up by the inspiratory current. Therefore in physiological breathing the inspired air should pass from the nostril high into the roof of the nose, abstracting the moisture from these cells, thus reaching the lungs humified. The return current, already laden with moisture, should pass outward near the floor of the nose which is comparatively dry. The higher course of the inspired air and the lower one for expired air are absolutely essential to physiological breathing. Very often individuals who have abundant air space in the nostrils suffer because of the pathological conditions within the nose. With them physiological breathing is impossible, and their ills are almost, if not quite as great as that of the mouth breather. The higher levels of the nostrils are obstructed, the proper ventilation of the nasal chambers is imperfect, secretion is too abundant, and a feeling of fullness and an anterior or posterior discharge, causes discomfort. This condition long continued, brings about trophic changes and results in permanent damage to the nasal structures and deranged functioning.

Polypi are the result of excessive moisture in the roof of the nose and of the air cells that open into it. The membrane surrounding the mouth of the cells or within them becomes degenerated and the result is the growth of these tumors. Often the membranes of the middle turbinate degenerates and the tumors spring from it, or the anterior tip of the turbinate may take on the appearance of a polyp. These conditions result from improper venlation of the nose and are usually associated with ethmoiditis.

On examination adenoids often may be seen through the nostril even in young children. Instruments are now made which illuminate the vault so that the growth may be seen through the buccal cavity. Facial expression, middle ear disease, discharge from the nostrils, mouth breathing, and in older children, lack of physical and mental vigor, point strongly towards adenoids. Inability in a child to concentrate the mind is presumptive evidence not to be overlooked. As a last resort, the adenoids may be felt with the finger introduced into the vault through the mouth, although this is seldom necessary.

Middle ear disease may be discovered by inspection of the drum. The patient may complain of pain or deafness. Pain along the course of the eustachian tubes indicates tubal catarrh and usually indicates middle ear disease. Increased or diminished quantity of cerumen in the external canal is evidence of middle ear disease; the former of more recent, the latter of long-standing involvement. Mastoid infection is usually accompanied by pain but this cannot always be depended upon as a symptom. Discharge from the ear of more than a few weeks duration is also symptomatic of mastoid disease. Transillumination will aid in clearing up uncertainties in some cases.

The sense of smell is usually obtunded in ethmoiditis and disease of the frontal sinus. The patient also complains of dizziness, often also of pain and fullness between the eyes. Inspection reveals the presence of discharge, which, if in the superior meatus, indicates disease of the posterior ethmoid cells or sphenoid cavity, and if in the middle meatus antrum, ethmoid, frontal or maxillary cavities are involved. Transillumination and the X-Ray are useful aids. After suction a discharge may be apparent when before its use, none was evident. There are cases that will require the most careful examination and exhaust the resources to arrive at a correct conclusion, so vague and uncertain are all the symptoms.

Septal deformities and diseased turbinates can be detected usually by inspection with a good light. Post nasal discharge, with adenoids excluded, usually indicate pathological conditions in the nostrils. Polypi are readily recognized by their color, but must not be confused with thick viscid secretion. This has occurred.

Adenoids should be removed as soon as a diagnosis is made. This is an operation not difficult, but often poorly performed because of faulty position of the patient, badly designed instruments and poor technique. The patient's head should be thrown forward, the chin directly over the supra sternal notch. Instruments

modelled after Gottstein are poorly designed and with them the best work is impossible. Adenoids will rarely return if entirely removed.

After the adenoids are removed, if children under twelve, still have insufficient air space, particularly if the palatal arch is high and nasal septum is deflected, they should be referred to a dentist skilled in orthodontia. By widening the dental arch he will lower the hard palate and increase the internasal space a sixteenth of an inch or even more, and in so doing he will give sufficient breathing space and reduce the deflexion in the nasal septum. It is seldom necessary to do intra-nasal operation before puberty. The removal of adenoids and proper placement of the hard palate will accomplish all that a nasal operation can; and in a more normal way. After puberty it is not certain what the dentist can do in neglected cases, and the nasal surgeon can then best correct obstructions by work within the nose. Let it be understood that all obstructions that persist until puberty are neglected. The obstructions should be removed prior to maturity. Bearing in mind the importance of the turbinate bodies, when it is possible to correct the defect by work on the septum, this should be done. And of all methods of correcting septal deformities, the submucus resection is by far the best. This method lends itself as readily to the removal of a spur as to the most complicated deviations, and the results are more permanent and satisfactory.

Removal of the lower turbinate is wrong in principle and unfortunate for the patient. A boggy lower turbinate nearly always responds to treatment higher up in the nose and as true hypertophy is comparatively rare, the cautery has but a limited use in nasal treatment. Diseased middle turbinates may be removed in part, or entirely and when the free passage of air or the drainage of the cells in the roof of the nose is blocked, enough must be done to re-establish drainage and ventilation. The use of the cautery here is only mentioned to be condemned. It is dangerous, and there are better and more certain means of securing the desired results.

It will take too much time to discuss treatment of the collateral sinuses and particularly of the ethmoid cells, yet this question will intrude itself into this discussion. It must be remembered that the distribution of the olfactory nerve is largely to the upper part of the middle turbinate, and not at all to the ethmoid cells; so the turbinate should not be needlessly sacrificed. The surgeon should be sure that no better remedy exists before performing an operation that will interfere with the olfactory sense, because to

obtund this function also lessens the more delicate gustatory sensations. It is, or ought to be, the aim of the nasal surgeon to preserve function not destroy it, and to needlessly injure olfactory and gustatory sensations is not good surgery. In selected cases proper attention to the ethmoid cells will re-establish drainage and ventilation, without sacrificing any essential part of the middle turbinate. The integrity of which should be preserved when it is possible to do so. If one will keep in mind the physiology of respiration and the necessity of drainage in the upper nose and do enough to secure these and prevent contact surfaces between the septum and lower turbinate, he will have established the thing desired, physiological respiration.

In the middle ear disease, prevention is of the highest importance. This can be more surely accomplished by making and maintaining healthy conditions of nose and throat, for out of a diseased nose and throat come all middle ear diseases and the subsequent deafness. It is folly to try to cure diseased ears without removing the cause. In the chronic form, if the nose and throat are put in a healthy condition, the inflammation usually subsides. In the acute form drainage is essential and if the eustachian tube is not patent, the drum must be incised. To wait until there is a decided bulging of the drum is to allow the patient to suffer and subject him to unnecessary danger. The antrum wall has less resistance than other parts of the middle ear and is diseased early where pus is retained. The incision must be done under aseptic precautions as must also subsequent dressings. A gauze drain inserted in the external canal in such a manner that it will come in contact with the opening in the drum will aid greatly in freeing the middle ear of pus. In tubal catarrah with a perforation, a solution of iodine, alcohol and glycerine is useful. This is also a valuable solution used early in acute cases, if warmed and dropped into the external canal. In cases where the discharge continues beyond a month or six weeks the antrum should be opened and a mastoid operation done after the method of Mr. Chas. Heath of London. This obliterates the mastoid cells and antrum, and eradicates the disease; preserves the hearing present and often restores it completely, while if the disease is allowed to run on or be mistreated by treatment the result finally is deafness.

I have said little about medical treatment in these cases, because nasal obstructions and middle ear disease in prevention and cure are surgical diseases. It is easy to cut away tissue but impossible to restore that which is lost, so one should be conservative. Effective thoroughness is however, more conservative than in-

effective expectancy. Nasal surgery is more than "making a hole" through the nose; it is establishing normal conditions within this organ. Because poor nasal surgery does not result fatally, gives a physician no license to commit mayhem on his patient. But careful, conservative, intelligent surgery on this organ will be a great comfort to the patient and a source of satisfaction to his physician. The sooner the medical profession realize this and throw away sprays, douches and ear massuers, and begin a rational treatment of causes, the sooner will deafness and other diseases of the collateral sinuses of the upper air passages become infrequent, and the special senses of hearing, taste and smell be preserved to the largest possible extent.

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## THE PRESENT APPROVED METHODS OF TREATMENT OF OBSTRUCTIONS TO THE LACRIMO-NASAL DUCT.

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If I mistake not the subject of lacrimo-nasal disease has not been discussed by this society during the past several years and in casting about for a theme to write upon, it occurred to me that the above mentioned one might not prove altogether uninteresting.

The diversity of methods used in the treatment of affections of the lacrimo-nasal apparatus is sometimes confusing. Good authorities have in times past differed, one recommending one form of treatment, another condemning it; and it is usually not until one has had some experience in treating these cases that he appreciates the value of one method over that of another. At the present time, however, judging from the current literature and reports from ophthalmological societies, certain forms of treatment in these conditions are being quite generally agreed upon. The state of the disease, acute, subacute, chronic, and the state of the patient as regards his ability to have one measure carried out in preference to another, determines the method to be pursued. For instance, probing in a given case might offer hope of good results, yet the patient being unable to come at regular intervals to have it carried out, or being too nervous to endure such sittings; extirpation of the lachrymal sac would probably be indicated.

Owing to the broad scope of this paper some details of the treatment and technique must of necessity be omitted. To describe each step minutely would not be possible in the time allotted.

In the first place, there are cases of obstruction in the lacrimo-

nasal passage which, in the beginning can be relieved by very simple measures, but which if allowed to go on would often result in chronic obstruction with dacryocystitis. The simplest of these cases I have found in infants and children. One is presented, for instance, with epiphora of short duration. On inspection the nose will usually be found stenosed, and if the tumefaction on the affected side is not sufficient to block the opening from the nasal duct into the nose, the swelling has probably extended up to involve the submucous tissues of the duct itself, causing the obstruction to the outflow of the tears. Simple astringent remedies applied to the nasal mucosa with a solution of argyrol for the conjunctival sac for a few days is usually all that is necessary to effect a cure.

The next variety of cases is that in which the epiphora has been present for some time, perhaps untreated; or where the more simple measures have failed to give relief. In these cases, as well as those to be described later; it is my custom, as a routine, to dilate the punctum and canaliculus slightly and syringe a few c. c. of boric acid solution into the lachrymal sac. If the upper canaliculus is patent the fluid will return through it to the conjunctival sac; and if the nasal duct is not entirely closed a few drops of the solution will enter the nasal chamber. Whether or not it is possible to get any fluid into the nose at the first sitting, repeated trials on subsequent days, by inserting the blunt point of the lachrymal syringe through the canaliculus into the upper end of the nasal duct and gently forcing an astringent antiseptic solution into the duct will frequently open the passage, and along with appropriate nasal treatment, bring about a cure. It is needless to add that the above measures are painful unless sufficient cocaine is instilled to anesthetize the parts.

The next variety of case is one in which a chronic state has supervened, with not only constant epiphora, but with a varying degree of mucopurulent discharge from the lachrymal sac. While exceptionally, syringing with suitable antiseptics, as described in the preceding paragraph, if persisted in long enough, will bring about happy results; it is the rule that more radical measures must be adopted to relieve the condition. This is because a well defined stricture has formed in the majority of such cases, and unless it is cut through and the parts kept open until it heals, or the lachrymal sac removed, little hope can be offered for recovery from the dacryocystitis. This class of cases with varying degrees of pus formation, acute and chronic, is the most numerous with which the physician has to deal, and to the treatment of which the major portion of this paper is devoted.

Let us now consider the best method of handling an acute dacryocystitis, complicating a more or less complete obstruction of the nasal duct. Acute dacryocystitis is rarely a primary condition; lacrimo-nasal disease of some kind preceding practically every case. We are instructed in one of our standard text books on ophthalomology to wait until pus has formed and then incise the lachrymal sac from the outside; and this method has in times past been an approved one. However, a fistula commonly results, requiring much subsequent treatment, with the frequent necessity of extirpating the sac finally. Two other methods are now quite generally preferred by ophthalmic surgeons. The first consists in slitting the canaliculus, preferably the lower; and forcing out the pus by pressing on the swelling from below upward. General anesthesia is usually necessary, and, if desired, the duct can be probed at the same time. This method is advocated by several prominent eye men; Posey, of Philadelphia, being one. The results, however, are not always as satisfactory as those obtained by the next procedure to be described.

The method par excellence, and, I believe, destined to be universally adopted by ophthalmologists, is one which was advocated by Agnew about forty years ago, and lately revived by Vierhoeff of Boston. General anesthesia is required unless the patient has an unlimited tolerance to pain. Cocaine or other local anesthetics do not help any in such cases. This method, essentially as given by Agnew and Vierhoeff, consists in an incision into the sac starting at a point between the caruncle and the inner commissure of the eye lids; the cavity of the sac can thus be easily reached. is emptied of its contents without difficulty and no external wound is left to embarrass one in the after treatment. The incision is best made with an angular knife or keratome. It is plunged through the sac to the lachrymal bone. Hemorrhage is free at first and pus does not always come until the incision is widened. The nasal duct should always be probed to break through the stricture and widen the passage into the nose, rapidly working up to the largest size probe, which is then left in the duct until the patient begins to regain consciousness. According to the method of Ziegler of rapidly dilating the passage in most all forms of lacrimo-nasal disease, subsequent probing would seem unnecessary, but it is safer to use the probe for a few times on alternate days. This is done through the original incision.

Not so very many years ago probing the nasal duct with one of the various forms of probes was the approved treatment in most forms of lacrimo-nasal obstruction. At the present I dare say com-

paratively few surgeons use the probe as a routine. The most favorable cases for the use of the probe are those in which the contraction is caused by simple inflammatory swelling of the mucous membrane, and, as previously shown, many of these cases can be relieved by syringing judiciously carried out; those cases in which cicatricial strictures are present are less favorable, and the least favorable are those in which the nasal duct is obliterated at one or more points. In the last instance the sac must generally be removed or obliterated.

Ziegler of Philadelphia, was one of the first to give up the constant probing of these cases, and substitute for it his method of rapid dilatation. In this procedure the canaliculus is not even slit; his cylindrical needle probe is introduced into the punctum and gently forced through the canaliculus in a horizontal direction until the bony wall of the lachrymal sac is reached. It is then withdrawn and his larger oval pointed cylindrical dilator is introduced and follows the course of the needle probe until the lachrymal bone is reached. The point of the dilator is then held firmly against the bony wall while the shaft is raised 90 degrees to the vertical position. Hugging the bone the point of the dilator is then made to slip downward until it engages in the opening of the bony canal; it is then forced with firmness downward and slightly forward through the stenosed duct into the nose. In those cases ordinarily favorable to probing good results are obtained without subsequent treatment; in the more obstinate cases supplementary measures such as styles and irrigation are almost always necessary. One thing which especially commends this method is that by it the normal capillarity of the canaliculus is retained.

In regard to styles, there are several kinds in use, the most generally approved being those made of an alloy of lead and zinc or lead and tin. The lead style has been more or less popular in the treatment of obstructions of the nasal duct ever since it was first recommended by Green in 1868. Personally some of my unique results in chronic dacyrocystitis have been obtained with the lead style. In cases showing great tendency to closure of the duct, where the patient will not submit to an extirpation of the sac, the style will frequently bring about a cure, if left in long enough and properly attended to. I use the ordinary fuse wire obtained of the local electric light company, from 1¼ to 2mm. in thickness. It is not necessary to make a groove on the wire for the conduction of the tears, although some authorities recommend it. The style should be made long enough to permit its smooth rounded end to rest on the floor of the nasal cavity and the top

should be hooked or bent so as to allow it to fit nicely into the groove made by slitting the lower canaliculus. To introduce the style the canaliculus is slit with a Weber's knife or some other suitable instrument, a passage is forced through the stricture; if one is present, with a probe, or the stricture is cut with a stricturotome, and the duct is dilated with a probe slightly larger than the style to be used. The easiest way to insert the style is to use the lead style introducer devised by Ziegler. It has a double groove to fit the vertical and horizontal portions of the style. The fingers or any small grasping forceps may be used, but care should be taken not to roughen any portion of the style, which would cause it to irritate the passage. The introducer obviates any trouble of this kind and greatly facilitates the placing of the style. As to the length of time it may be worn, I had one patient who wore the fuse wire style with perfect comfort for three years. It was finally removed and two years have elapsed with no recurrence of her dacryocystitis, which was originally an obstinate case. Instances are on record of cases wearing the style for much longer periods than this.

After introducing the style it is my custom to allow it to remain for about a week if the drainage keeps good. It is then removed and the lacrimo-nasal passage syringed with a saturated solution of boric acid. If the duct is then large enough to permit of the easy introduction of the style again, it is replaced at once; if it goes in with difficulty. I gently probe again which makes the second introduction of the style easy. As a rule after the first two or three times the style goes in without difficulty. The intervals between the removal of the style are gradually lengthened, if all goes well, until a month or six weeks goes by a couple of times without changing. Soon after this in the majority of cases it is safe to remove the style and leave it out, a cure being thus accomplished in from twelve to sixteen weeks.

The best results as regards relief from epiphora are always obtained by some form of probing or by the use of the style; but cases are met with where nothing but removal of the lachrymal sac will afford relief from the recurring attacks of dacryocystitis. In such cases there is usually either a bony stricture or some bony necrosis of the nasal duct. By far the large majority of cases presented for treatment can be relieved by the less radical measures if competence on the part of the surgeon is combined with patience and persistance.

I wish at this point to report a case, not for the purpose of refuting previous claims, but because it is interesting and somewhat

unusual, and also to illustrate the fact that after all is said, each case is freqeuntly a law unto itself. Mr. B. a lumber dealer, came to me in the spring of 1908, suffering from a chronic dacryocystitis of about twenty years duration. It was his habit to press pus from his right lachrymal sac once or twice a day for many years. He had consulted a number of physicians and tried many local remedies without avail during this time. Having heard of the possibility of a cure by probing he came to me for this purpose. I told him frankly that I could offer him little hope of a cure by probing; that in his particular case extirpation of the sac was probably the only thing which offered a reasonable chance for recovery. But he insisted that I try the probing and so I did. The canaliculus was slit, the sac washed of its foul contents, the stricture in the nasal duct cut through and the probe passed. There was some irregularity in the bony canal and I felt the task was more hopeless than ever. After I had treated the patient for ten days with probes and irrigations, he disappeared. He returned again in about a month stating that he thought he was about cured when he left and quit for a while to see what the result would be. I found his condition nearly as bad as at first when he returned and I reopened the lacrimo-nasal passage. He stayed with me only a short time again and I next learned that he had gone to Kansas City, to be treated by a specialist there. In about eight weeks he returned to me again and said he would stay with me six months, if necessary, if I would only try to cure him by probing. I argued with him again as to the foolishness of wasting time having a condition treated which probably would not get well without an operation. But he was obdurate and we started in again. After getting the sac clean and reestablishing the passage by probes, I inserted a lead style. In three days I had to remove it, as it blocked the drainage. I next probed and irrigated for a few days and then inserted a silver canula. This gave more trouble than the style and had to be removed. The probing was then recommenced and kept up daily with irrigations for twelve weeks. At this time a number of 16 Theobald's probes ecould be introduced with ease. I then began to lengthen the intervals between the probings and finally at the end of three months from the time we began the last course of treatment I discharged the patient. I gave him, however, a number 12 probe with instructions to pass the same every few days for a couple of months. This patient was so grateful for the relief of his trouble that he wrote me about every six months for three years telling me that his "game optic was still all right."

TO SUM UP:

1. The majority of all cases of lacrimo-nasal obstruction, in the beginning, can be relieved by very simple measures.

2. Syringing with mild astringent antiseptic solutions should always be tried faithfully, even in those cases where a mucopurulent discharge from the sac is present.

3. It is better as a rule not to open an acute dacyrocystitis through the skin, More satisfactory final results are obtained by letting the pus out through the canaliculus, or by the incision of Agnew; followed by the use of the probe.

4. Rapid dilatation by the method of Ziegler is sufficient to effect a cure in many cases formerly made tedious by probing.

5. The use of the style in suitable cases in much preferable to probing.

6. Good results can be accomplished by probing in selected cases if the patient will stand for it.

7. When quick relief to chronic dacryocystitis is desired, extirpate the lachrymal sac.

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## THE IMPORTANCE OF INSPECTION AND STANDARDS FOR MEDICINAL SUBSTANCES.

PROF. L. E. SAYRE, University of Kansas, Lawrence.

Read before the Kansas Medical Society, May 8, 1913.

It has been with no little timidity that the writer has accepted the complimentary invitation of your Secretary to present a paper on "Standardization", partly because there is apparently existing differences of opinion concerning certain phases of the subject as viewed from the standpoint of the physician and from that of the pharmacist.

Standardization of medicinal agents touches acutely the interests of the pharmacist and the physician. Neither can afford to neglect the opportunities offered by it to his respective calling. Both professions may profit by the proper enforcement and by the broad application of the principles involved in the law relating to it.

It has frequently been stated that unless all the sources of supply of remedial agents (clear to the consumer) be guarded, our Food and Drugs Law becomes more or less ineffective. If there are any avenues left open for the exploitation of sub-standard material there are those found ever ready to enter them and to supply this material at all prices and in any quantity. It is unnecessary to repeat that the reputable houses are too upright and honorable

to stoop to the practice of even carelessly standardizing their products or that they would yield to the temptation of supplying two grades—one grade for localities subject to inspection and the other for other localities which are not frequented by inspectors. It is also needless to repeat that reputable physicians in every possible way at their command secure for themselves remedial agents which would creditably pass the inspectors and would meet the requirements of the standards. Nevertheless, the theory is tenable—any loop-hole, however small, for the introduction of sub-standard material furnishes an incentive for an evasion of the law—such incentive will invite those, always ready; to take advantage of it. Experience has shown this to be true.

It has been stated, and I believe not without foundations, that there are some corners of the state of Kansas which furnish good fields for the exploitation of inferior preparations. Other states, which have poor administration of the law applying to medicine, complain bitterly of the existing conditions, which illustrates the force of the remark that there are those ready to furnish medicine without reference to quality.

In the last Kansas legislature, there was an act passed which had for its object a broader application of the Food and Drugs Law as applied to the sale of and to the dispensing of medicine. This act, amendatory to the old Pharmacy Law, after reciting numerous restrictions imposed upon the pharmacist as a dispensor of drugs, states in Section 5:

"Nothing hereinbefore contained in this act shall prohibit any practitioner of medicine from administering or supplying to his patients such articles as may be fit, proper and necessary, provided drugs and medicines dispensed by him shall comply with the Kansas Food and Drugs Law and be subject to inspection as provided in said Law."

This act also provides that every one who dispenses from a stock of drugs shall be responsible for the quality of all drugs, chemicals and medicines he may sell or dispense.

Unfortunately, there is no provision in the law for the expense of such broad inspection of drugs and medicines except as funds may come to the Board of Pharmacy through its channels of registration or as may come to it by contribution. There is no provision by which expenses of such examination shall be assumed by the Board of Health. Therefore, in order to make this law of beneficial effect, it is in the hands of the physicians themselves to encourage and foster its execution for their own protection and welfare. When the bill was presented to the legislature, it was

gratifying to state that it received the opposition of only those physicians who did not understand the purport of the bill itself. Unfortunately, very little or no missionary work had been done among physicians to promote it because of the lack of funds to accomplish this. However, some missionary work was done individually. Physicians and medical societies were consulted. For this service I am indebted largely to Dr. Sippy of Belle Plains, Kansas, who has made the statement that he never interviewed a single physician who, after the proper explanation, did not agree that the proposed law was thoroughly equitable in every respect and that it possessed much merit. He further stated that the only ones in the medical profession who raised an objection were those who had no comprehension of its good features.

We have had opportunities of obtaining the sentiment and attitude of some who have been more or less seriously affected by the law and we have been extremely gratified to learn of their enthusiastic support of it. Furthermore, physicians are just beginning to learn that the broad application of the principles of standardization is beneficial in many directions. Physicians are voluntarily sending to the laboratory samples of suspected material upon which they are asking for reports. Some of these examinations show adulteration—others have shown that suspicions were unfounded—that the medicinal agents suspected were true to standard.

Standardization as applied to medicine had its beginning in this country as early as about 1854, when our importations of drugs at the port of New York were first inspected. Since that time, through the influence of both professions, pharmacy and medicine, the application of its general principles have developed a system which is so fostered and popularized as to have a powerful controlling influence, amounting, through public sentiment, almost to compulsion in a very favorable direction. The first application of standardization was in the direction of the determination by qualitative and quantitative analysis of the amount of possible impurities in inorganic medicinal chemicals due to added adulterants, to an imperfect process which failed to remove natural adhering impurities, or to natural deterioration. Very clear, concise and accurate processes of analysis have been devised for the detection of these impurities and adulterations.

During the days of the Empirics the properties of medicinal agents were so vaguely interwoven with superstition that the conception of definite proportion was almost inconceivable. Medical practice has not yet entirely divorced itself from superstition but

it has reached a stage where drug therapy is based upon quality of material and upon definite and accurate proportion of the active medicinal agent or constituent. Belladonna, for example, is active in proportion to the atropine and other alkaloidal constituents; opium in proportion to the morphine constituent; nux vomica in proportion to strychnine constituent, etc. Hence, there is a definite relation between disease and remedial agent of which the Empirics never dreamed. Pharmacology has made this relation still more emphatic. Facts resulting from pharmacological study have shown, for example, that the relation of curine, obtained from curare, on methylization, yields a derivative which is 226 times as poisonous as the original substance—that morphine by dehydration produces a systemic emetic of less poisonous character than the narcotic morphine. Pharmacology also lends its contribution to the chemist when his skill is baffled in testing, by chemical means, the physiological activity or toxicity of a given agent, as in the case of ergot, cannabis indica, digitalis, strophanthus, etc.

The effects of the cooperation of pharmacology and chemistry have been manifested recently in the standardization of remedial agents as such. The Council on Pharmacy and Chemistry of the American Medical Association in its last issue makes the following significant statement:

"It is generally recognized by physicians who have given attention to the matter, that a considerable proportion of the articles in the Pharmacopoeia of the United States and in the National Formulary are worthless, irrational, obsolete and superfluous. Repeated efforts have been made to have at least the more objectionable of these articles eliminated. These efforts, however, have uniformly encountered the objection that the articles or preparations are used by some physicians and should therefore be recognized and authoritatively defined."

This process of elimination, having once started on a thoroughly scientific basis, it is almost impossible to predict what its final result will be. Unquestionably there will be an arraignment of many of the popular remedial agents—popular in the sense of their being commonly prescribed by physicians. This process of elimination, if we may be permitted to predict, will extend beyond what is known as the official and semi-official preparations into the domain of nostrums and patent medicines.

In reference to this subject of nostrums and quack remedies, it may be stated that the reign of quacks has not ended with the 20th century. The sceptor is held with a firmer grasp and the Empire has even a wider range. It is said that from 1880 to 1912

the number of proprietaries increased from 4,194 to 38,813 and this increase was largely from 1900 to 1910. The production in 1904 was $117,000,000 and in 1909, $142,000,000. In 1911, it was $160,000,000, and this exclusive of proprietaries made by cooperative companies. This record is taken from the Canadian Pharmaceutical Journal, November, 1912, from a report of the National Wholesale Druggists, Assocation of the United States, held in Otcober last, in Milwaukee. We do not propose to place the responsibility of this accumulation of good, bad and indifferent remedial agents upon any class of persons, professional or unprofessional. It is, however, in our opinion, true that we are all to a greater or less extent slaves of quackery in one shape or another. But the responsibility of checking fakes and frauds rests with the two professions, pharmacy and medicine. These two professions are now provided with the tools and the administrative machinery for curbing, at least, this mischief and damage to the public welfare. The broad application of the principles of standardization is all that is necessary to accomplish this. It is very unfortunate that very little progress has been made in the direction of standardizing what is known as patent medicines. Pharmacists are accused, and we think unduly if not unfairly, of the exclusive exploitation of this class of agents. Relative to this perplexing and exceedingly annoying question we wish to quote the introductory paragraphs of an article which was published in the August number of the Journal of the American Pharmaceutical Association, which read as follows:

"Like the gallant soldier who said in his letter, 'I am writing this with my sword in one hand and my pistol in the other.' so the modern pharmacist stands before the medical profession, with one hand full of proprietary cure-alls and with the other distributing literature advocating a return to rational prescribing and an increased use of official preparations."

"Without attempting to excuse him altogether, the writer feels that the charge so frequently made that the druggist is attempting to work both ends from the middle is in a large measure unjust. Those who make it do not realize that the druggists' apparent inconsistency is pressed upon him by force of circumstances in which patent medicines represent his business necessities, while the propaganda for rational prescribing represents his aspirations for better things and his strivings for a more professional as well as a more profitable business."

We are sure of what we say, when we assert that the average pharmacist has an ambition for higher pharmacy and that he is

striving against odds on the one hand to make an honest living and on the other to endeavor to elevate the tone of his profession. He craves the opportunity of using the skill and knowledge required of him by law and to him the tendency on the part of those in his vocation to introduce foreign sidelines is distasteful. We know that he has a decided anxiety to improve the character of his vocation, his methods of compounding and to add to his usefulness to the physician. The public as well as the medical profession should be concerned, and to guard it as well as the sister profession against unbridled commercialism, it seems to us, in the up-building of this vocation. Theoretically, the practice of pharmacy, as well as the practice of medicine, is restricted by law to persons properly qualified. This is considered essential to the welfare of the community. The obligations which pharmacy takes upon itself as a custodian of medicines includes its donations to the science of the results of its investigations, as well as the observance of certain ethical rules. Carried to its logical conclusions it would seem that the public, in granting a license to pharmacists, pledges itself to protect the calling and expects as a return a certain service which is partly concluded in the building up of the profession itself and in the efforts which it may put forth to guard the public against fraud.

We are not here to defend any of the many reprehensible practices of either one or the other professions and certainly not as one loyal to pharmacy to go out of our way to bring to light those things which are obnoxious and vicious. We would prefer to point out a way in which representative physicians and pharmacists might on the higher planes, cooperate in circumscribing at least, the limits of the faker and nostrum maker, if he must be considered as a necessary evil—an obligation entrusted to these professions.

In the last legislature, a bill was passed which related to live stock remedies, including all condimental feeds, medicated stock foods, stock-food tonics, stock powders, condition powders, conditioners, animal regulators, proprietary medicines, or any preparation of like nature in either solid or liquid form, designed for any animal except man, and administered internally for their stimulating, invigorating, curative or other powers. This law requires that any importer, jobber, firm, association, corporation or person who shall sell, offer or expose for sale or distribute in Kansas any live stock remedy, shall file for registration with the Director of the Agricultural Experiment of the Kansas Agricultural College a statement that he desires to offer such a remedy

for sale in this state. Also a certificate, the execution of which shall be sworn to before a notary public, or other proper official, stating: First, name and principal address of manufacturer or person responsible for placing such live stock remedy on the market; second, the name, brand or trademark under which the remedy is to be sold; third, the minimum net contents of the package, lot, or parcel of such live stock remedy, and fourth, the English name of each ingredient used in the manufacture of remedy registered, and it is further provided that when any of the substances are of an especially active or poisonous character, such as opium, belladonna, nux vomica, ergot, strophanthus, etc., such ingredients must be stated on the certificate; also that when such substances as common salt, charcoal, sulphur, earth, elevator dust, etc., are used as filler the maximum percentage shall be stated.

This act, thus recently passed, is very significant and it leads to the reiteration of the statement frequently made that we are more careful of the protection of the lower animals than we are of the protection of our human brethern and children. It would seem to one who is at all interested in this subject, that physicians and pharmacists together should, at least, make a strong effort in the direction indicated by this recent legislation—namely to apply the principles of this law—which are the underlying principles of standardization, to human tonics, powders, conditioners, regulators and all so-called medicines concealed in attractive cartoons and packages, the ingredients of which are so concealed as to make it practically impossible for even the pharmacologist to judge of their merit. Both pharmacy and medicine should take hold of the subject with courageous hands, and by degrees control this traffic.It is not enough to condemn the practice and products of the nostrum vender on paper. It is gratifying to report in connection with this subject that the American Pharmaceutical Association is now contemplating the scheme of cooperation with the Council of Pharmacy and Chemistry of the American Medical Society in establishing a laboratory and to determine whether certain proprietary medicines are legitimate—whether in the whole the public is benefited or injured by such ready-made medicines. and whether it is possible to draw a distinct line of demarkation between legitimate and illegitimate remedies. The settlement of this question is in the line of standardization, for the broad application and ad vocating of which this paper is presented.

# THE JOURNAL
## OF THE
# Kansas Medical Society.

JAMES W. MAY, - - - - EDITOR.

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The Journal was established in June, 1901, by a publication committee at Topeka. In May, 1903, Dr. G. H. Hoxie was elected editor and served four years. In January, 1904, it incorporated the Wichita Medical Journal, owned by Drs. W. H. Graves and G. K. Purvis, and the Western Medical Journal, owned by Dr. A. J. Roberts, of Ft. Scott. In March, 1908, it incorporated the Wyandotte County Medical Journal, owned by Dr. James W. May. It is now printed in Kansas City, Kansas, and appears the first of every month. Correspondence should be addressed to the editor. Editorial office, 400-1-2 Portsmouth Bldg., Kansas City, Kas.



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## EDITORIAL

A copy of The Bulletin of the American Medical Association will be regularly mailed to every county secretary who sends in his name to the secretary of the American Medical Association. This is a bi-monthly publication that is devoted to the discussion of questions affecting organization and conduct of medical societies, especially county societies. Its pages furnish a medium of interchange of ideas and plans which have proven successful in building up and stimulating interest in the work of the county society. Do not fail to send in your name. The Bulletin will prove to be a valuable assistant and may be the means of solving the problems of your work.

Every county secretary should send for this Bulletin which would be of a great deal of assistance, for its pages are replete with matters of great interest to the profession.

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### MEDICAL PROFESSION AND COMMERCIALISM.

Of late years, it seems that men who are eminently fitted as leaders of commerce, have by some error broken into the ranks of the medical profession.

Reference is made to the surgeon, often only self-styled, who purchases for himself a practice. This is done in several ways.

First by the much discussed practice of giving cash commissions or secretly dividing the fee. Second, by appointing men to positions such as railway surgeons in some small place providing that the appointee refer surgical cases to the one who appoints him. We can see little difference in the two methods. Their results are the same. Either method diverts the referred cases into a channel which in many cases they would not take if it were not for the bribery, or purchase price.

We hear frequently of resolutions being passed against these practices but we wonder if the burdening of existing laws, codes, etc., with resolutions will get the result or merely obscure the already existing laws and codes.

The code of ethics to which we all subscribe certainly covers the subject and it appears that it would be wiser to enforce what we already have instead of working off our energy by merely resolving. Make an example of some one. Let some one get up enough courage to get some bonifide evidence, prefer charges and try some offending member in the manner already prescribed. That will get results that all the resolving possible could not. The code of ethics is plain in Chapter 2, Article 6, Section 3.

"It is detrimental to the public good and degrading to the profession, and therefore unprofessional, to give or to receive a commission. It is also unprofessional to divide a fee for medical advice or surgical treatment, unless the patient or his next friend is fully informed as to the terms of the transaction."

Again the subject of soliciting by letter, personal interview, etc., is covered by Chapter 2, Article 1, Section 4.

"Solicitation of patients by circulars or advertisements or by personal communications or interviews, not warranted by personal relations, is unprofessional. It is equally unprofessional to procure patients by indirection through solicitors or agents of any kind or by indirect advertisement, or by furnishing or inspiring newspaper or magazine comments concerning cases in which the physician has been or is concerned."

Let's get busy and eradicate some of this. At least, drive them out of the American Medical Association ranks.

ARCH D. JONES.

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## "TURTLE SERUM."

Many of our readers, no doubt, have read articles in the daily press and in Medical Journals concerning the "discovery" of a new sure cure for tuberculosis by Dr. Friedreich F. Friedman of Germany and we mention it only to say that it is too soon yet to pass any definite opinion upon this treatment.

Dr. Friedman has been severely criticized by most of the American Medical Journals, and perhaps his attitude since reaching our shores has justified such criticism, but we should not forget that most every decided advance in medicine and surgery has invariably been met with a pessimistic welcome and no doubt the benefits of such advance have been retarded thereby. If the Berlin professor has a cure for even the incipient tubercular cases he has a real cure as in the course of time the advanced cases would disappear.

Time alone can establish the real worth of the "turtle serum" and while it is often wise to warn against all seeming fraud let us be rather reticent and hopeful than too eager to criticize and condemn.

H. B. C.

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## "FEE SPLITTING."

Special attention is directed to an article which was read at the state society meeting, and appeared in this Journal last month, entitled "The Surgical Situation in Kansas from the General Practitioners Standpoint," by Dr. T. A. Jones of Liberal.

From the manner in which this paper was received and discussed it was just about the "hit" of the whole meeting and to our minds this means that the doctors of the state are becoming tired of the present condition of affairs relative to fee splitting and will welcome a radical reform. One doctor in discussing this paper went so far as to suggest that he would hereafter make the fee with his patient and then employ a surgeon himself to do the work, thereby doing away with any business transaction between the surgeon and the patient.

Whatever the remedy may be we hope that the day is not far off when such a thing as secret division of fees will be unknown and unthought of, at least, by any member of our society. H. B. C.

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## "INSIDIOUS LOBBYING."

When Senator Owen the father of the bill to create a "National Department of Health" was on the witness stand before the committee investigating the "lobby" at the Capital he did not fail to tell that a powerful "lobby" by the "Patent Medicine Trust" and the "League" was in cooperation against his bill. This has been known to the medical profession all the time and we are especially glad of the opportunity to have the spot light thus turned upon the operation of these lobbyists that the country at large may have some idea of the cause of so much opposition to Senator Owen's bill.

H. B. C.

The annual meeting of the American Medical Association held at Minneapolis, June 17-20, was a success in every particular. The meetings were held in the halls of the University of Minnesota, and the very atmosphere of this temple of learning was favorable to success. The section meetings were said to be of more than passing interest, and especially was this so of the section on surgery, which had a program filled to overflowing with papers and discussions by the leaders in this department of practice. The scientific exhibits were way above those usually shown and this was particularly true in the department of bacteriology and pathology. At the meeting of the House of Delegates, Kansas (entitled to two delegates) was well represented by Dr. Geo. M. Gray and Dr. J. T. Axtell. The entertainments were splendid; the ladies being especially well provided for with automobile trips, visits to country clubs, bridge parties, teas and musicales. The reception to the president as usual was packed and the reception line as long as ever. The ball which followed re-awakened the dancing spirit of many old-timers who fought shy of the "turkey-trot and the bunny hug." On Thursday evening, St. Paul (Ramsey County Society) entertained with a vaudeville show, smoker and ball and this event stood out very prominently in the list of entertainments. Clinics were held by several "notables" before and after the meeting; a large delegation journeying to the Mayos' at Rochester. The following officers were elected:

President, Dr. Victor C. Vaughan, Ann Arbor, Mich; First Vice-President, Dr. Walt P. Conaway, Atlantic City, N. J; Second Vice-President, Dr. Frank C. Todd, Minneapolis; Third Vice-President, Dr. Lillian H. South, Bowling Green, Ky; Fourth Vice-President, Dr. Sol G. Kahn, Salt Lake City ,Utah; Secretary, Dr. Alexander R. Craig, Chicago (reelected); Treasurer, Dr. William Allen Pusey, Chicago (reelected); Trustees: Dr. W. W. Grant, Denver; Dr. Frank C. Lutz, St. Louis; Dr. Oscar Dowling, Shreveport, La, and to fill the term made vaceant by the death of Dr. Daugherty, Dr. Thomas McDavitt, St. Paul, Minn.

The society will meet next year at Atlantic City, an ideal meeting place.

Those registered from Kansas at the meeting are as follows:

Boone, William M., Highland; Crumbine, S. J., Topeka; Glasscock, Samuel S., Kansas City; Gray, George Morris, Kansas City; Hassig, John F., Kansas City; May, James W., Kansas City; Peak, F. Pratt, Decorah; Wilhoit, J. C., Manhattan; Williams, C. L., Topeka; Faust, J. Wesley, Kansas City; Haury, Samuel S., Newton; Jameson, C. H., Hays; Jury, Herbert Wm. Chaflin; Kimble, T., Miltonvale; Love, R. S., Athol; Love, John E., Whiting; Maxson,

D. W. Toronto; Menninger, C. F., Topeka; Miner, Elmer A., Independence; Morrison, J. H., Independence; Nave, H. A., Kansas City; Sawtell, J. E., Kansas City; Skinner, John O., Great Bend; Smith, A. J., Leavenworth; Smith, Chas. L., Independence;Speirs, G. O., Ellenwood; Speer, N. C. Osawatomie; Staat, J. H., Bushton; Stewart, Robert, B., Topeka; Sutton, Walter S., Kansas City; Thacher, M. S., Turon; Trueheart, Marion, Sterling; West, H. W., Yates Center; Axtell, J. T., Newton; Bribach, Eugene G., Atchison; Gage, G. R., Hutchinson; Koch, George L., Hoisington; Langworthy, S. B., Leavenworth; McCarty, T. L., Dodge City; Nye, H. W., Osborne; Blake, C. D. Ellis; Bieber, Karl A., Tipton; Bryan, H. R., Galatea; Coon, W. F., Coury; C. W. Reynolds, Holton.

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The following article from the Bulletin Journal Animal Therapy, June, 1913, speaks the truth concerning this phase of Christian Science. It was sent in by Councillor Kenny:

RELIGIO—MEDICAL CRIMES

Nearly every experienced physician knows of at least one instance where diphtheria has killed a member of a Christian Science family or similar faith-cure cult. Every competent physician knows that antitoxin properly timed and properly dosed saves practically every case of this disease. The legalized religious murders of the inquisition are legitimately comparable in horror to some of the religio-medical murders of this progressive twentieth century. Present-day conceptions of religious liberty give warrant to legally sane adults to lose their lives for a religious delusion, but there is no law, written or inferential, which justifies these same individuals in risking the lives of their helpless unthinking children in a gamble with a joke.

If, as seems most likely, the present genuine progressivism of this country shall prove steadily progressive, legislation must ultimately separate religion from medicine. With our present enlightenment the association of religion with government would do infiinately less harm in a century than is being done now in a year by the association of religion and medicine. We have positive proof that these cults annually benefit thousands of unstable, illogical, neurotic citizens, and it is also freely admitted that hundreds of promising children are annually killed by the neglect of these agencies, and one average child is worth more to the state than a hundred hysterical incoordinates who for years have shown a hopeless instability of self -regulation.

# EDITORIAL CLIPPINGS.

## SUGGESTIONS FOR INCREASING INTEREST IN COUNTY SOCIETIES.

1st. Improved programs. Interest in the meeting depends largely on the attractiveness of the program.

2nd. Take up post-graduate course as recommended by American Medical Association. This systematizes the program.

3rd. Confer with State Board of Health for at least one meeting a year on public health matters. Co-operation with the Health Department is essential to the welfare of the community.

4th. Have at least one reader a year from a distance. Confer with Committee on Scientific Work of State Society if necessary. They will be glad to suggest names of those willing to render such service.

5th. Arrange for one or more clinical meetings a year. Select subject and request all who have proper cases to bring them before the society; then have a discussion on the same, always with the understanding that discussion of the case shall not be held in the presence of the patient; otherwise, frequently patients cannot be shown for obvious reasons.

6th. Arrange for demonstration by bacteriologists and pathologists with specimens, lantern slides, etc.

7th. Arrange for social part of meeting. Some light refreshments at the close of the meetings are an adjunct to fraternal intercourse.

8th. See that meetings are held often enough to keep up interest. Once or twice a year is not enough. Invite every member of the profession in the county to at least one meeting a year, not necessarily inviting them all to the same meeting. In counties where men do not show a willingness to write papers either designate writers for different meetings or see that outsiders are invited in other words, see that the meetings are made interesting. It should be the aim of every county society to secure a permanent home; a small library, with a supply of current journals, and the use of the larger libraries for reference books will greatly increase interest in the county organization.

9th. Arrange the time of meetings to accomodate the largest number of members. Where men come from long distances, an evening session will often appeal to a larger number of men when it permits them to reach their homes at a seasonable hour.

10th. Select as officers men who are willing to work. Keep good men in office. Do not promote them who have shown they

will not attend to the duties assigned them. Efficiency is the only criterion of leadership. "No physician should accept office unless he is prepared to give the position the attention that it deserves and unless he is interested in the work."

11th. In small societies do not unduly multiply offices—the secretary's and treasurer's duties can be best done by one man. Always supply officers with clerical help if work is onerous. Detailed drudgery work should not be asked of men serving others without compensation.

12th. Make the dues large enough to warrant conducting the society work in a proper manner. Those who object to the amount of their dues usually do so because they are not receiving full value for them. Give back a dollar in value for every dollar paid in and complaints will be few.

13th. Provide a committee on entertainment who shall welcome new or prospective members or guests at meetings. The officers of the society may be active or ex-officio members of such com mittee. Newly registered physicians should be visited by such committee or written to and asked to join the county society.

14th. Have high ideals. Be liberal, yet firm in maintenance of a high ethical standard. Educate the public. Be a power for good in the community. Do not be ashamed of the county society or apologize for it; make it better. Attend all meetings and see that others do the same. "The county society is a conservator of patriotism and worthy citizenship."—New York State Journal of Medicine.

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## SOCIETY NOTES.

The Butler County Medical Society met in Augusta, June 19. The following program was prepared but the unavoidable absence of Drs. Wilson and McKinney materially shortened the program.:

Paper—Mal-Formation of the New-Born, Dr. N. E. Wilson. Discussion by Dr. H. A. Hill.

Paper—Para-Typhoid Fever, Dr. Wm. McKinney. Discussion led by Dr. R. J. Cabeen.

Paper—Progress in Treatment of Rectal Diseases, Dr. H. Philipp. Discussion led by Dr. F. E. Dillenbeck.

Paper—Neurasthenia, Dr. W. W. Weber. Discussion led by Dr. W. O. Bennett.

The physicians and their ladies all took their supper together at the West & Switzer Cafe.

The evening session was a round table discussion of the fee-splitting question, participated in by all the members and a dozen

of the leading physicians of Wichita, members of the Sedgwick County Medical Society; including their president, Dr. O. W. Swope and Dr. Arch D. Jones, Councillor for the 6th District.

Both sides of the question was ably presented and advocated We cordially extend an invitation to our visitors to come again.

J. R. McCLUGGAGE, Sec.

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Program of the Harvey County Medical Society for July:

"OBSTETRICS."

"Complications of the Third Stage of Labor." Dr. G. D. Bennett.

"Placenta Previa." Dr. D. G. Buley.

"Eclampsia." Dr. R. O. Howard.

Review of Recent Literature and Report of Case. Dr. F. L. Abbey.

F. L. ABBEY, Sec'y.

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## NEWS NOTES

Dr. W. L. Borst of Belpre, Kansas, has sold his practice to Dr. A. C. Boyd. Dr. Borst will do post-graduate work during the summer before locating again.

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Dr. Fred A. Forney has succeeded Dr. J. E. Foltz as superintendent at the State Industrial Reformatory, Hutchinson.

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Dr. S. L. Axford, formerly prison physician at Leavenworth, has been appointed superintendent and physician-in-charge of the Evergreen Place Sanitarium and Hospital, Leavenworth.

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Dr. James Faulkner, Lansing, has succeeded Dr. S. L. Axford, Lansing, as physician to the State Prison, Leavenworth.

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## OBITUARY.

**Archibald Borden Sellards, M. D.,** Miami Medical College, Cincinnati, 1875; a veteran of the Civil War; died at his home in Lawrence, Kan., April 20, from cerebral hemorrhage, aged 68.

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**Herbert Whitworth, M. D.,** Pulte Medical College, Cincinnati, 1875; coroner, physician and health officer of Ford County; died at his home in Dodge City, Kans., May 17, aged 60.

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**William C. Hamilton, M. D.,** University of Paris, France, 1860; surgeon in the Confederate Service during the Civil War; a practitioner of Chicago until 1879 and thereafter a practitioner

of Topeka, Kans., died at his home in that city, May 11, from paralysis, aged 74.

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**Theodore Wing Peers, M. D.,** University of Michigan, Ann Arbor, 1885; emeritus professor of diseases of children in Kansas Medical College, Topeka; a member of the Kansas Medical Society; died at his home in Topeka, May 12, from cerebral hemorrhage, aged 56.

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The Journal of Kansas Medical Society:

I wish to report the death of William Dio McPhee, aged 42, graduate Kansas Medical College, Topeka, 1890; several years practitioner at Anthony, Kansas; committed suicide by hanging himself at his home June 8, after suffering a number of years from melancholy.

W. L. GALLAWAY.

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# REVIEWS.

**Present-Day Uses of Vaccines**—Theobald Smith, Boston (Journal A. M. A., May 24), after prolonged study and investigation of the methods of producing immunity from infectious diseases, discusses at length the present-day uses of vaccines. Premising that facts for immunization from disease, or rendering them of milder type, were known to the Chinese thousands of years ago, he says that since Jenner's discovery and later, Pasteur's time, new methods for inducing immunity have been successfully evolved by succeeding generations. Continued attempts to modify viruses and make them as harmless as possible are being made, and so satisfactory have been results that the use of vaccines is no longer limited to prevention but is now carried to the very heart of disease itself. To evaluate the present-day status in experimental medicine and to suggest possible means and aids to further inquiry and discovery is the avowed object of his paper. He suggests, as an important aid to further accomplishment in the domain of preventive medicine, the study of the natural history of infectious diseases; an inquiry into Nature and her laws, and a study of the ultimate results in one attack of a given disease and just how the system rids itself of an infecting agent. The body makes different response and resistance to different infectious diseases, hence, each group will need to be studied by itself. Accepting the fact that it is possible to raise the level of resistance to an infectious disease by artificial means, he reviews the methods used beginning with Pasteur who favored use of living virus of a disease as a vaccine. Acknowledging that they had proved superior to heated

ones for securing immunity, yet he thinks there is an element of danger involved in their use which may become apparent at any time. Living vaccine may prove too virulent and cause genuine disease, and the vaccinated become carriers.

So-called sensitized viruses, the author thinks, should receive more attention, and explaining why a neutral mixture is more effective than pure toxin, he says the toxin mixed with the antitoxin penetrates the body while the former is mostly retained at place of puncture. Directing attention to the reciprocal relation between pathogenic micro-organisms and their specific host, he emphasizes the need of studying every infectious disease by itself and the keeping of the principle of active immunization carefully and constantly in view. Vaccination for typhoid should have a thorough test but not be allowed to take the place of those precautions heretofore held as essential in combating it. Vaccines are now used in affections in which the specific agents are frequently detected in the blood and in which the symptoms plainly show that the infection is general. Medical science is therein at a disadvantage because the types of disease in which they are used are not reproducible in the laboratory. He views with misgiving the commercialization and indiscriminate use of vaccines and enjoins the profession to see to it that vaccine therapy does not degenerate into reckless experiments on human beings. To this end the student should be influenced and given opportunity to grasp the scientific method and gain a critical attitude toward old and new alike. Concluding, he thinks vaccines applied during disease will be rarely, if ever, life-saving but they may hurry processes that lead to recovery, vivifying unused reserves in the tissues.

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# MISCELLANEOUS.

## THE TRUTH ABOUT DR. FRIEDMANN.

Dr. J. L. Grove, Who Is In Berlin Writes His Views.

## WHAT BERLIN THINKS.

Experiments Decsribed In Laboratory Research Work.

The following article is extracts from a letter written by Dr. J. L. Grove, now specializing in surgery in Vienna. The Kansan had requested Dr. Grove, when it was known that he intended to make a study of the tuberculosis serum while in Berlin, to write home a letter that the Kansan readers might read. This letter was written to home folks and extracts made by Dr. Axtell and

read at the Harvey County Medical Society meeting, held Monday night. This tells of Dr. Grove's laboratory work in Berlin, of tests made with the turtle serum on guinea pigs, also humans and of his opinion of Dr. Friedmann:

It is no easy matter to arrive at just conclusions or secure for yourself an unprejudiced opinion in reference to the latest knowledge along the lines of treatment for tuberculosis, here in Berlin. Friedmann seems utterly without professional support outside of his own office force. When such men as Bier, Pick, Westenhoeffer and others who are leaders in medicine here brand him as a grafter and renounce his methods before the Berlin Medical Society, it is hard not to fall in line. Yet, when one carefully analyzes the statements these men make, the condemnation is not so much on the treatment, as on his methods of exploiting it, both here and in America. Throughout, his methods have been purely selfish and with personal and financial gain always first. Further, this selfish motive of Friedmann has lead him to bring out this treatment before it had been sufficiently tested clinically. Possibly, I might better say the clinical test of various investigators had not been compiled, compared or checked up by each other. You know, it takes the other fellow to pick flaws in your work. There has been during the past several years a number of bacteriologists of reputation, quietly working on the turtle serum here in Berlin. I do not believe they had chosen Friedmann to expolit the cure. Dr. Friedmann quit his work over Professor Orth's laboratory and started one of his own. He locked himself and his work in, not even allowing his rooms to be cleaned, and then without his work being checked up or verified by others he begins the "show." It looks to me as though Friedmann stole the other worker's fire. He is doubtless a little premature in his exploitation.

Now as to the treatment: For sometime, of course, we have known of the existence of tuberculosis in animals and birds, cattle, chickens, rabbits, fish, turtles and snakes all suffer from the ravage of the disease and the germ found to be the specific cause is much the same in each case. All are acid fast, i. e., when stained with a certain dye, preparatory to examining with the microscope, they will hold the dye color even when washed in weak acid, which removes the color from other types of germs. Then too there is some difference in size, for instance the turtle bacillus is only ¼ to 1-6 the length of the germ which affects man. Further difference is shown when the germs are grown on artificial media. Here the tuberculosis germ multiplies very much more rapidly than the human type. Yet these germs are all tubercle bacilli producing,

in the respective animals a disease which we know to be tuberculosis.

Now the chief difference which has to with the very essence of the cure. I can best explain this by giving one of the experiments which we have carried out in Dr. Piorkowski's laboratory. By the way, three of us, a Canadian, a New Hampshire man and myself are getting a private course under this professor. He is the man who is furnishing Dr. Heit of Pittsburg with the serum. He showed us a cable from him asking for more serum and telling of very good results in five cases, one of them being in his wife, that he is treating. Eight guinea pigs were given doses of very active tubercle bacilli. After ten days when they were all very sick, not eating and showing fever six of them were given doses of turtle serum. Two days following the two not given the serum died and were found full of miliary tuberculosis. Lungs liver and glands were especially affected. The other six were beginning to eat and temperature going down from three to four degrees above normal to one-half to one degree above.

After another week we killed two of the six and on post-mortem we were unable to locate a single tubercle. The rest of the pigs, after a few days, have had normal temperature and seem perfectly well up to date. Just what became of the tubercles, how or why they were absorbed, and they must have been, and eliminated from the pigs so treated, I'll not try to explain, although they have a few theories here. The fact remains they were dissolved and the pigs so treated are apparently well.

Now as to the work we have seen in the hospitals. Over two hundred babies in the children's wards of the Charity Hospital, all showing active tubercular tendency, all from tubercular parents, were given very small doses of Piorkowski's live turtle serum as an immunizing dose. While these babies were the usual poorly nourished unresisting kind found in large public hospitals, without a single exception they have failed to show a bad result from the injection, no swelling, no abscess, and nearly every case has shown marked general improvement. We have seen quite a number of adult cases, of tubercular bone disease and skin tuberculosis, which have made very marked improvement under the treatment. It is more difficult to note changes in adult pulmonary cases although a number which we have seen report themselves as feeling better, less fever and absolute cessation of night sweats. Altogether Piorkowski reports to us that the physicians working with his serum have given over 500 doses and have up to date no bad results to report.

From the foregoing you can see that the live serum from the cold blooded animals seems to have a peculiar antagnoistic effect for the live human tubercle bacilli. If the men who are working here, and there are a number of them, will soon make public their results, get them in shape to guide the careful practitioner who has not the wonderful clinical opportunities offered here, there can be no doubt in my mind that another long step will be taken toward combating the dread disease, tuberculosis. Dr. Friedmann's rash outbreak will certainly delay the general sane use of live turtle serum and no one should believe for a moment that advanced cases of destructive tuberculosis can be restored again to normal health, by the use of it or any other remedy so far known.—The above is from The Kansan, Newton, Kansas.

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## CLINICAL NOTES

**Pyelitis in Infancy**—The recognition of pyelitis in childhood is usually easy, and yet it is overlooked again and again simply because of the possibility of its occurrence is forgotten and the urine of an infant is seldom examined. Unrecognized acute pyelitis in infancy gives rise to prolonged severe fever, with profound constitutional disturbance, which may be fatal. Recognized and treated appropriately, it often subsides in a few days, and even if symptoms persist for a time they quickly become less severe, and generally soon yield to treatment.—Geo. F. Still in Pediatrics.

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"Pregnant women who have the clinical history or reveal symptoms of syphilis may be submitted to the salvarsan treatment intraveneously, and such treatment repeated at varying intervals, care being exercised to avoid too severe a reaction. The intervals between treatments may be longer than in the ordinary run of cases, and the course made to cover a period of four to six months."
—C. H. Chetwood, of the New York Polyclinic Medical School.

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**Diagnosis of Peritoneal Effusions**—With the patient lying on his back in peritoneal effusions of moderate or small quantity, there is always fullness of the flanks, the degree of fullness depending not only on the quantity of fluid, but also on the relaxation and thinness of the abdominal wall. If the abdominal wall is relaxed there is always more or less flattening of the abdomen anteriorly; if the walls are tensely distended this appearance is obscured. If there is much subcutaneous fat the fullness is even more greatly obscured; edema will also obscure it.—A. McPhedran in the Canadian Medical Association Journal.